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ABSTRACT

Self-regulation refers to the process whereby students activate and sustain cognitions, behaviors, and affects, which are systematically oriented toward attainment of goals. Effective self-regulation requires that students have goals and the motivation to attain them, and maintain a sense of self-efficacy for learning and performing well. A social cognitive view of self-regulation is presented that highlights the roles of goals, progress feedback, and self-efficacy. Research is described in which elementary school children were taught to use a paragraph writing strategy and received either a process (learning) goal, a product (performance) goal, or a general goal. Some process goal students also received goal progress feedback that linked their performances to use of the writing strategy. Providing a process goal with progress feedback led to the highest levels of self-efficacy, strategy use, and writing skill. Suggestions for fostering students' motivation during classroom writing instruction are provided. (Contains 25 references.) (Author)

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Abstract

Self-regulation refers to the process whereby students activate and sustain cognitions, behaviors, and affects, which are systematically oriented toward attainment of goals. Effective self-regulation requires that students have goals and the motivation to attain them, and maintain a sense of self-efficacy for learning and performing well. A social cognitive view of self-regulation is presented that highlights the roles of goals, progress feedback, and self-efficacy. Research is described in which elementary school children were taught to use a paragraph writing strategy and received either a process (learning) goal, a product (performance) goal, or a general goal. Some process goal students also received goal progress feedback that linked their performances to use of the writing strategy. Providing a process goal with progress feedback led to the highest levels of self-efficacy, strategy use, and writing skill. Suggestions for fostering students' motivation during classroom writing instruction are provided.

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Student Motivation for Literacy Learning: The Role of Self-Regulatory Processes

Self-regulation refers to the process whereby students activate and sustain cognitions, behaviors, and affects, which are oriented toward the attainment of goals (Zimmerman, 1989, 1990). Self-regulation includes such activities as: attending to and concentrating on instruction; organizing, coding, and rehearsing information to be remembered; establishing a productive work environment; using resources effectively; holding positive beliefs about one's capabilities, the value of learning, the factors influencing learning, and the anticipated outcomes of actions; and experiencing pride and satisfaction with one's efforts (Schunk, 1989).

Effective self-regulation requires that students have goals and the motivation to attain them (Bandura, 1986; Zimmerman, 1989). Students must regulate not only their actions but also their underlying achievement-related cognitions, beliefs, intentions, and affects. In this paper I focus on how self-regulatory processes affect students' motivation for literacy learning and their achievement outcomes. An increasing body of research substantiates the idea that learners' self-regulation of their use of strategies and their achievement beliefs sustains learning efforts and promotes achievement (Schunk, 1989; Schunk & Zimmerman, in press; Zimmerman & Martinez-Pons, 1992).

Theoretical Background

The conceptual focus of this paper is social cognitive theory, which views self-regulation as comprising three processes: self-observation, self-judgment, self-reaction (Bandura, 1986; Kanfer & Gaelick, 1986). Self-observation is deliberate attention to aspects of one's behavior (Bandura, 1986). Self-observation is necessary but by itself insufficient for sustained self-regulation. A second process is self-judgment, which refers to comparing present performance with one's goal. Such comparisons inform one of goal progress and can exert motivational effects on future performance. Self-reactions to goal progress may be evaluative or tangible (Bandura, 1986). Evaluative reactions involve beliefs about progress. The belief that one is making progress, along with the anticipated satisfaction of goal accomplishment, enhances self-efficacy and sustains motivation. People also may react in a tangible fashion to perceived progress; for example, by buying something they want or taking a night off from studying. The anticipated consequences of behavior rather than the consequences themselves boost motivation (Bandura, 1986).

At the start of learning activities students have such goals as acquiring skills and knowledge, finishing work, and making good grades. During the activities students observe, judge, and react to their perceptions of goal progress. These self-regulatory processes interact with one another. As students observe aspects of their behavior they judge them against standards and react positively or negatively. Their evaluations and reactions set the stage for additional observations of the same behaviors or others. These processes also interact with the environment (Zimmerman, 1989). Students who judge their learning progress as inadequate may react by asking for teacher assistance. In turn, teachers may teach students a more efficient strategy, which students then use to foster learning. That environmental factors can help develop self-regulation is important, because educators increasingly are

advocating teaching students self-regulatory strategies (Schunk, 1989; Zimmerman, 1990).

Effective self-regulation depends on students developing a sense of self-efficacy for learning and performing well. Self-efficacy refers to personal beliefs about one's capabilities to learn or perform skills at designated levels (Bandura, 1986). Self-efficacy is hypothesized to influence choice of activities, effort expended, persistence, and achievement. Compared with students who doubt their learning capabilities, those with high self-efficacy for accomplishing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level.

Learners acquire information to appraise their self-efficacy from their performance accomplishments, vicarious (observational) experiences, forms of persuasion, and physiological reactions (Schunk, 1989). Students' own performances offer reliable guides for assessing self-efficacy. Success generally raises efficacy and failure lowers it, except that once a strong sense of efficacy is developed it is unlikely to be affected by an occasional setback.

Students acquire efficacy information by socially comparing their performances with those of others. Similar others offer the best basis for comparison (Schunk, 1989). Students who observe similar peers perform a task are apt to believe that they, too, are capable of accomplishing it. Information acquired vicariously typically has a weaker effect on self-efficacy than performance-based information because the former can be outweighed by later failures.

Learners often receive persuasive information from teachers and parents to the effect that they are capable of performing a task (e.g., "You can do this"). Such persuasive feedback enhances self-efficacy, but this increase will not endure if later efforts turn out poorly. Students also acquire efficacy information from physiological indexes (e.g., heart rate, sweating). Symptoms signaling anxiety may convey that one lacks skills; the perception that one is reacting to a situation in a less-stressful manner may be interpreted to mean that one is more competent.

Information acquired from these sources does not influence self-efficacy automatically but rather is cognitively appraised (Bandura, 1986). Learners weigh and combine the contributions of such factors as perceptions of their ability, task difficulty, amount of effort expended, amount and type of assistance received from others, perceived similarity to models, and persuader credibility (Schunk, 1989).

Self-efficacy is not the only influence on achievement behavior. High self-efficacy will not produce competent performances when requisite knowledge and skills are lacking. Outcome expectations, or beliefs about the likely outcomes of actions, are important because students engage in activities they believe will result in positive outcomes. Perceived values of outcomes refers to the importance students attach to learning or what use they will make of what they learn. Assuming that students possess adequate skills, believe that positive outcomes will result, and value what they are learning, self-efficacy is hypothesized to influence the choice, direction, and intensity of much achievement behavior.

Effective self-regulation depends on holding an optimal sense of self-efficacy for learning during task engagement (Bandura, 1986; Bouffard-Bouchard, Parent, & Larivee, 1991; Zimmerman, 1989). As students work on a task they compare their performances to their goals. Self-evaluations of progress enhance self-efficacy and keep students motivated to improve.

Although a low sense of self-efficacy is detrimental for motivation and achievement, effective self-regulation does not require that self-efficacy be extremely high. Salomon (1984) found that a lower sense of self-efficacy led to greater mental effort and better learning than when self-efficacy was higher. At the same time, motivation suffers when self-efficacy becomes too low, because learners will not attempt the task if they feel they have no chance of succeeding. A critical element is that learners feel efficacious enough to surmount difficulties. Assuming this condition is met, then harboring some doubt about whether one will succeed can mobilize effort and use of effective strategies better than will feeling overly confident.

Classroom Applications

I now will exemplify how the preceding principles can be applied in classrooms to enhance motivation for literacy learning and achievement outcomes. My focus is on the domain of writing, which lends itself well to self-regulation (Graham & Harris, in press). Contemporary theories view writing as a problem-solving process that reflects goal-directed behaviors (Flower & Hayes, 1981). Writers generate goals and alter them as they compose. Effective self-regulation requires that writers feel efficacious about attaining their goals.

Carl Swartz and I (Schunk & Swartz, 1993a, 1993b) conducted three projects that explored the effects of learning goals and progress feedback on children's self-efficacy, use of writing strategies, and writing skill. The background of these projects derives from theory and research on goal setting, which shows that self-regulation is optimal when students have goals and evaluate their goal progress during task engagement. Goal properties affect self-judgments. In general, motivation and achievement are better enhanced by goals that are specific rather than general, proximal (close at hand) rather than distant, and difficult but attainable rather than too easy or overly difficult (Bandura, 1986).

Goal effects also may depend on whether the goal denotes a learning or performance outcome (Ames, 1992; Meece, 1991). A learning goal refers to what knowledge and skills students are to acquire; a performance goal denotes what task students are to complete. Goal setting research typically has focused on such goals as rate or quantity of performance, but educators increasingly are advocating that greater emphasis be placed on learning processes and strategies (Borkowski, Carr, Rellinger, & Pressley, 1990).

Learning and performance goals may exert different effects on self-regulatory activities even when the goals have similar properties. A learning goal focuses students' attention on processes and strategies that help them acquire knowledge and skills. Students who adopt a learning goal are apt to experience a sense of self-efficacy for skill improvement and engage in activities they believe enhance learning (e.g., expend effort, persist, use effective strategies). As they work and perceive improvement,

their self-efficacy is substantiated and their motivation for learning is sustained.

In contrast, a performance goal focuses students' attention on completing the task. Such a goal may not highlight the importance of the processes and strategies underlying task completion or result in a sense of self-efficacy for learning. During task engagement, students may compare their work with that of their peers instead of with their prior performances. For students who experience difficulties, these social comparisons result in low perceptions of ability (Ames, 1992). Although performance goals may motivate students over short periods or on easier tasks, an overall lower sense of efficacy will not sustain self-regulation.

Research testing these ideas has yielded mixed evidence (Elliott & Dweck, 1988; Meece, Blumenfeld, & Hoyle, 1988). We tested these notions in the context of instruction on writing paragraphs. We provided children with process (learning) or product (performance) goals and predicted that the process goal of learning a writing strategy would promote achievement outcomes better than a product goal of writing paragraphs and a general goal of working productively. Although the process and product goals were comparable in goal properties, the process goal was expected to highlight strategy use as a means to improve writing. Students who believe they are learning a useful strategy experience greater control over learning and self-efficacy (Bandura, 1986; Schunk, 1989). Perceived strategy usefulness motivates students to apply the strategy, which promotes skill acquisition (Borkowski, 1985). In contrast, a product or general goal may not convey that the strategy is important. Learners who believe a strategy does not contribute much do not employ it systematically or feel confident about learning (Borkowski, Johnston, & Reid, 1987).

Some of the process-goal students were provided with goal progress feedback that linked their use of the strategy with their writing performance. We expected that the addition of goal progress feedback would further enhance achievement outcomes. Goal progress feedback informs individuals about how to attain goals and motivates them to work on the task by denoting progress and conveying that goals are attainable. Such progress feedback also is a persuasive source of self-efficacy information and can raise efficacy by suggesting that students are competent and can continue to learn. Goal feedback also supports students' perceptions of the importance of the strategy as an aid to learning, which raises self-efficacy and motivates them to continue to apply it.

The subjects in two of our projects received language arts instruction in regular classes; participants in the third project had been identified by the school district as academically gifted. Initially we pretested students on self-efficacy and skill. The self-efficacy test assessed capabilities for performing five paragraph writing tasks: generate ideas, decide on the main idea, plan the paragraph, write the topic sentence, write the supporting sentences. The 10-unit efficacy scale ranged from not sure to really sure. The tester explained the distinguishing characteristics and read a sample for each of the paragraph types: dsescriptive, informative, narrative story, narrative descriptive. Children were told that descriptive paragraphs discuss objects, events, persons, or places (e.g., describe a bird), informative paragraphs convey information effectively and correctly (write about something you like to do after school), narrative story paragraphs contain events

sequenced from beginning to end (tell a story about visiting a friend or relative), and narrative descriptive paragraphs sequence steps in the correct order to perform a task (describe how to play a favorite game). Children privately judged self-efficacy for performing the five tasks for each of the four paragraph types.

For the skill test children were given a topic for each of the four paragraph types and wrote a paragraph. Children's paragraphs were scored for organization, sentence structure and word choice, creativity, and appropriateness of writing style given the purpose. Paragraphs also were scored for words per T-unit. A T-unit is a main clause plus attached subordinate clauses. Words per T-unit is a measure of syntactic fluency and a reliable indicator of sophistication in writing skill (Hillerich, 1985).

Following the pretest we assigned subjects to experimental conditions and gave them 45-minute instructional sessions over 20 days. The instruction covered four types of paragraphs: descriptive, informative, narrative story, narrative descriptive. Five days were devoted to each type of paragraph. Children assigned to the same experimental condition met in small groups with a teacher from outside the school.

The procedure during the five sessions devoted to each type of paragraph was identical. At the start of the first session the teacher gave the goal instructions appropriate for children's experimental assignment, after which he or she presented this writing strategy: What do I have to do? (1) Choose a topic to write about. (2) Write down ideas about the topic. (3) Pick the main idea. (4) Plan the paragraph. (5) Write down the main idea and the other sentences.

The first 10 minutes were devoted to modeled demonstration in which the teacher verbalized the strategy's steps and applied them to sample topics and paragraphs. Children were taught to construct a web consisting of a box in the center and lines emanating from it. The teacher put the main idea in the box and the other ideas at the ends of the lines. To show organization, the teacher ordered the ideas starting at the top and working around the box. Students then received guided practice (15 minutes); they applied the steps under the guidance of the teacher. The last 20 minutes were devoted to independent practice; students worked alone while the teacher monitored their work. Student motivation and self-regulatory processes became critically important during independent practice when students largely were on their own to write. The daily content coverage was as follows: session 1--strategy steps 1, 2, 3; session 2--strategy step 4; session 3--strategy step 5; session 4--review entire strategy; session 5--review entire strategy without the modeled demonstration. Children worked on two or three paragraph topics per session.

There were four experimental conditions: process (learning) goal, process goal plus progress feedback, product (performance) goal, general goal (instructional control). To children assigned to the process goal and the process goal plus progress feedback conditions the teacher said at the beginning of each session, "While you're working it helps to keep in mind what you're trying to do. You'll be trying to learn how to use these steps to write a (type of) paragraph." Children assigned to the product goal condition were told at the start of each session, "While you're working it helps to keep in mind what you're trying to do. You'll be trying to write a (type of)

paragraph." These latter instructions controlled for the effects of goal properties included in the process goal treatment. General goal students were told, "While you're working, try to do your best." This condition controlled for the effects of receiving writing instruction, practice, and goal instructions, included in the other conditions.

Each child assigned to the process goal plus progress feedback condition received feedback 3-4 times during each session, which conveyed that children were making progress toward their goal of learning to use the strategy to write paragraphs. Teachers delivered feedback to individual children with such statements as, "You're learning to use the steps," and, "You're doing well because you followed the steps in order." Teachers provided feedback contingent on children using the strategy properly to ensure that feedback was credible.

Strategy use, self-efficacy, and writing skills were assessed following the instruction. In general we found that the process goal plus feedback condition was the most effective and that there also were some benefits of providing students with a process goal alone. In the first study (Schunk & Swartz, 1993a), process goal plus feedback students judged self-efficacy higher than the product goal and general goal conditions, and process goal children judged self-efficacy higher than general goal students. General goal students demonstrated the lowest skill, and the process goal and process goal plus feedback conditions demonstrated higher skill than the product goal condition.

In a second study (Schunk & Swartz, 1993a), process goal plus feedback students judged self-efficacy higher than general goal students and demonstrated higher skill than general goal and product goal students; process goal children scored higher on skill than general goal students. Process goal plus feedback children showed the highest strategy use during test sessions. We also found that gains were maintained six weeks after completion of instruction. Self-efficacy, strategy use, and skill were positively correlated.

In the project with gifted students (Schunk & Swartz, 1993b) we found that process goals and progress feedback led to higher self-efficacy and skill than product goals; process goals by themselves promoted skill better than product goals. Process goal plus feedback students judged strategy use higher than children in the the other conditions. The benefits of process goals plus feedback maintained themselves over a six-week maintenance period. This study also assessed the effects of treatments on students' goal orientations. Process goal plus feedback students scored higher than product goal students on task orientation (emphasis on learning goals) and significantly lower on ego orientation (emphasis on performance goals) compared with process and product goal students. Task orientation correlated positively with self-efficacy, skill, and strategy use.

This instructional procedure could be modified to further enhance students' self-regulatory activities. We used teachers to model the writing strategy. Within this context, models could provide attributional and efficacy information. Attributions are perceived causes of outcomes and are hypothesized to exert important effects on self-regulation, motivation, and achievement (Schunk, 1989; Weiner, 1985). The progress feedback stressed strategy attributions, which also could be verbalized and exemplified by the

models with such statements as, "I was able to write this paragraph because I applied the strategy's steps," and, "I'm not doing well because I'm not really trying to apply the strategy's steps properly."

Models also can enhance learners' self-efficacy. Theory and research show that observing similar others improving their skills can raise observers' self-efficacy for skill improvement. Peer models can serve as a vicarious source of efficacy information. Teachers could select students to write paragraphs and verbalize aloud their thoughts while others observed.

The type of feedback provided could be broadened to include effort and ability information. Effort feedback is credible during skill acquisition (e.g., "You're getting better because you're trying to do well") (Schunk, 1989). Effort feedback ("You need to work harder") will not be beneficial when students already are working hard and lack the skills to perform better with greater effort. As skills develop, teachers might introduce ability feedback (e.g., "That's good, you're really becoming a good writer"). Feedback also can be provided by peers. Peer conferences are commonly employed during writing instruction, in which students read each other's writing and provide feedback on strong points and areas requiring revision (DiPardo & Freedman, 1988). Peers can be taught to provide feedback on ways that students' writing has improved and to link improvement with attributions to effort, strategy use, and ability.

Students' self-observations and self-evaluations of their writing are critical components of self-regulation (Bandura, 1986; Zimmerman, 1990), and can be incorporated into regular writing instruction. Self-observation and self-evaluation of one's work can involve counting the number of sentences one has written, determining whether one has written a sentence on each idea generated, deciding whether the story has a beginning and an end, and judging whether ideas are presented in a sensible order. Graham and Harris (1989) note that these techniques by themselves do not always produce gains in student writing but are more effective when combined with other self-regulation procedures. They describe an intervention in which students set goals for the number and type of vocabulary items to include in stories, and after each writing period students gauge their performance and evaluate their success in meeting their goals. Sawyer, Graham, and Harris (1992) describe an intervention using self-observation and self-evaluation in which students count the number of story grammar elements they use, graph the number, and compare it to the goal.

In this paper I have attempted to show how self-regulatory processes come into play to affect learners' motivation during literacy learning. I believe that this is an exciting area of research that offers many promising classroom applications. Educators are increasingly concerned with teaching students to apply strategies during cognitive skill acquisition. Literacy learning is a prime area for the application of self-regulatory processes to enhance motivation and skill acquisition.

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